DISCUSSION

A computerised search of the National Library of Medicine's database into the techniques of intra-osseous wire suture bone fixation does not highlight this technique. This is a swift and straightforward technique that simplifies this procedure and deserves to be highlighted.

References

1. Lister, G. Intraosseous wiring of the digital skeleton. *J Hand Surg Am* 1978; **3**: 427.

Intra-operative ultrasound localisation of a parathyroid adenoma

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BACKGROUND

In around 85% of cases of primary hyperparathyroidism, the cause is a solitary parathyroid adenoma. Pre-operative detection and localisation of an adenoma is often achieved through the combined use of ultrasonography and radiolabelled nucleotide scans of the neck. The use of intra-operative ultrasonography can further assist in localisation, helping to minimise the need for excessive exploration of the neck.¹

TECHNIQUE

We have so far successfully used intra-operative ultrasonography in five parathyroidadenectomies. Once anaesthetised, the surgeon uses a SonoSite Inc. ultrasound machine (SonoSite Ltd, Alexander House, 40A Wilbury Way, Hitchin SG4 OAP, UK) to scan the neck and, where possible, correlate structures with pre-operative images. This achieves accurate visualisation of the ultimate position of both the adenoma and other structures in the neck, in particular the relation to the internal jugular vein and carotid artery (Figs 1 and 2). We have found this technique also assists positioning of the neck to facilitate the optimum access for removal.

In one case, the pre-operative nucleotide scan revealed a single adenoma which the pre-operative ultrasound scan was unable to identify clearly. Once anaesthetised, the neck was able to be optimally positioned and using ultrasonography the adenoma localised with a greater degree of certainty.

In all patients, the operative localisation and removal of the adenoma was successful.

Figure 1 Pre-operative ultrasound scan identifying the parathyroid adenoma (Ad) and carotid artery (Ar).

Figure 2 Intra-operative ultrasound using SonoSite machine identifying the intra-operative positions of the adenoma, artery and internal jugular vein (V).

DISCUSSION

We found this simple to perform technique to represent more accurately the intra-operative position of both the adenoma and other important structures in the neck, providing the surgeon with additional information to facilitate successful and complete removal whilst minimising exploration of the neck.

Reference

1. Kell MR, Sweeney KJ, Moran CJ, Flanagan F, Kerin MJ, Gorey TF. Minimally invasive parathyroidectomy with operative ultrasound localization of the adenoma. *Surg Endosc* 2004; **18**: 1097–8.